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16. Abstract

In June 2001, the Mineta Transportation Institute joined several schools nationwide, as well as authorities in transportation, to discuss sustainable transportation. The purpose was to expose children to the opportunities available in transportation-related careers and to discuss utilizing natural resources to develop alternatives to current modes of transportation. Each school presented a short project on sustainable transportation. The key-note speaker was Secretary Norman Mineta. The moderators were Rod Diridon and Trixie Johnson from MTI. The organizer of the event was Dr. D.K. Kung, Professor at San José State University.

Participating in the event were: Secretary Norman Mineta, Secretary of Transportation, United States; Steve Hemminger, Executive Director of the Metropolitan Transportation Commission; Kevin Hyland, New York City Transit; Pete Cipolla, General Manager, Valley Transportation Authority; Bill Millar, President, American Public Transit Association; Ross Carney, Community Relations Manager, Hampton Roads Transit; students and teachers at Garnett Patterson Middle School, Washington, D.C.; students and teachers at Meadows Elementary School, San Jose, CA; students and teachers at Ruffner Middle School, Norfolk, VA; and students and teachers at Brett Harte Middle School, Oakland, CA

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This transcript is prepared as part of the Mineta Transportation Institute's ongoing efforts to share the most up-to-date information available regarding the transportation industry and transportation issues. In June 2001, the Mineta Transportation Institute joined several schools nationwide, as well as authorities in transportation, to discuss sustainable transportation and to stimulate the minds of elementary and middle school students.

- The Honorable Norman Y. Mineta, founder of MTI, for his participation and inspirational words to the teleconference participants;
- San José State University Professor Dr. Dongsung Kong, for organizing the symposium;
- MTI Executive Director Rod Diridon and Research Director Trixie Johnson for acting as moderators;
- Presenters including Steve Hemminger, Executive Director of the Metropolitan Transportation Commission; Kevin Hyland, New York City Transit; Pete Cipolla, General Manager, Valley Transportation Authority; Bill Millar, President, American Public Transit Association; Ross Carney, Community Relations Manager, Hampton Roads Transit; and
- Students and teachers of Garnett Patterson Middle School, Washington, D.C., Meadows Elementary School, San Jose, CA, Ruffner Middle School, Norfolk, VA, and Brett Harte Middle School, Oakland, CA.

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- Publications Assistant Sonya Cardenas;
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EXECUTIVE SUMMARY

This year, the Mineta Transportation Institute joined several schools nationwide, as well as authorities in transportation to act as sponsors, to discuss sustainable transportation. The purpose was to expose the children to the opportunities available in transportation-related careers and to discuss utilizing natural resources to develop alternatives to current modes of transportation. Each school presented a short project on sustainable transportation. The symposium included a question and answer session. The keynote speaker was Secretary Norman Mineta. The moderators were Rod Diridon and Trixie Johnson from MTI. The organizer of the event was Dr. D.K. Kung, Professor at San José State University. The main event was a symposium on *Sustainable Transportation*, held in June 2001. This publication, a transcript and summary of the June symposium is the next step in the information transfer effort.

Dr. Kung brought together a nationwide representation of transportation authorities and school children as follows:

- Secretary Norman Mineta, Secretary of Transportation, United States
- Steve Hemminger, Executive Director of the Metropolitan Transportation Commission
- Kevin Hyland, New York City Transit
- Pete Cipolla, General Manager, Valley Transportation Authority
- Bill Millar, President, American Public Transit Association
- Ross Carney, Community Relations Manager, Hampton Roads Transit
- Students and teachers at Garnett Patterson Middle School, Washington, DC
- Students and teachers at Meadows Elementary School, San Jose, CA
- Students and teachers at Ruffner Middle School, Norfolk, VA
- Students and teachers at Brett Harte Middle School, Oakland, CA

OPENING REMARKS AND INTRODUCTIONS

PARTICIPANTS:

Hi…

ROD DIRIDON:

We've been joined here by the Brett Harte Middle School… right?

PARTICIPANTS:

Yes.

ROD DIRIDON:

From Oakland California. And so, someone over there tell us what school you're from.

PARTICIPANT:

San Jose… (Various answers)

ROD DIRIDON:

Did you hear that Steve?

STEVE HEMMINGER:

I think they're Roanoke, Virginia, Rod.

TRIXIE JOHNSON:

That's Virginia.

ROD DIRIDON:

Virginia is here with us now. And we have San Jose here, also, and Oakland, so far. We have two more schools to come up.

UNKNOWN:

New York should be connected. They tell me they're connected. The New York one when they come on will be from Brooklyn.

ROD DIRIDON:

Is Brooklyn up yet?

(Inaudible background conversation).

ROD DIRIDON:

Everybody that can hear us – we're having a little trouble getting Washington, DC on the line. Their equipment is not compatible with the rest of us and so we're trying to figure out a way to make them compatible.

(Inaudible background conversation)

ROD DIRIDON:

It's very important that you not speak unless you want everybody to hear you, because your microphone systems are what's called "voice-activated." And as soon as you say something, your microphone will cut into the conversations that other people are having, and everybody will hear what you have to say. So first of all, make sure you're not chitchatting and saying difficult things to your neighbor. And secondly, make sure you frame your sentences carefully and whenever you speak, begin by saying your name and your city's name, the city where you're broadcasting from. So if someone were to speak from here, it would be, I would say my name – "This is Rod Diridon and I'm from San Jose." And then go ahead and say what you'd like to say. That way, when we do the book, we'll be able to identify you properly in the book. And secondly, everybody across the nation will know where you are and who you are. But more importantly, or just as importantly, make sure you don't giggle or chitchat unless you want to communicate to everybody, because your microphone will automatically communicate to everybody when you talk into it.

We don't have Washington up yet, but let's see if we can communicate with the other centers that haven't yet called in. Is New York with us? Brooklyn with us?

KEVIN HYLAND:

Yes, this is Kevin Hyland with New York City Transit. We are here really as participants and really as observers of your conference today. We do not have students with us, but we're very interested in hearing the presentations of the other students.

ROD DIRIDON:

I see. Thank you very much, and we'll look forward to you being involved and having a class next year. Thank you, Kevin.

KEVIN HYLAND:

Thank you.

ROD DIRIDON:

We have Virginia with us with all the pretty yellow shirts. Virginia, would you like to communicate with us?

RUFFNER MIDDLE SCHOOL, VA:

(In unison) Hi. We can't hear you.

ROD DIRIDON:

Can you hear me now?

RUFFNER MIDDLE SCHOOL, VA:

(Laughter) Yes.

ROD DIRIDON:

Alright, you're coming through loud and clear. You're very well organized there, and it's nice to have you with us.

What was the other group? Oakland is here. I know Steve made a comment earlier. Can Oakland come up again?

BRETT HARTE MIDDLE SCHOOL, OAKLAND, CA:

We're here, Rod.

ROD DIRIDON:

All you have to do is say that and see how the film, the camera, switches to Oakland and we hear the speaker from Oakland.

That is Steve Hemminger, and Steve Hemminger is the Executive Director of the Metropolitan Transportation Commission, the commission that guides transportation for the whole Bay Area, all nine counties of the Bay Area. And I don't see him there right now, but… there he is.

BRETT HARTE MIDDLE SCHOOL, OAKLAND, CA:

I'm back, Rod.

ROD DIRIDON:

Alright. See, most of the rooms are set up so that you see right here? That's a microphone. So it picks up voices from throughout that *(Inaudible)*.

BRETT HARTE MIDDLE SCHOOL, OAKLAND, CA:

(Sounds of phone ringing) Hello?

ROD DIRIDON:

And there's Steve getting a call from probably the President. You guys in Oakland think that the President is talking to Steve now?

BRETT HARTE MIDDLE SCHOOL, OAKLAND, CA:

No.

STEVE HEMMINGER:

That was Tom Margro for Pete Cipola.

PETE CIPOLA:

Oh good. (Laughter) Tell him the check is in the mail.

TRIXIE JOHNSON:

He's the head of BART.

ROD DIRIDON:

For all of you students, there's a very important negotiation going on between Santa Clara County and the BART system, Bay Area Rapid Transit System in the Bay Area, to establish a rail line, a very expensive 2 billion or 3 billion dollar rail line, 4 billion dollar rail line from Fremont in the Bay Area down through Silicon Valley. And that negotiation is being conducted by Pete Cipola, who is right here, and Tom Margro who is the General Manager of the BART system. And so, Steve Hemminger made a joke by suggesting that the telephone call was from Tom Margro to Pete Cipola, because he knows how important those negotiations are.

BRETT HARTE MIDDLE SCHOOL, OAKLAND, CA:

The joke was better before you explained it, Rod.

ROD DIRIDON:

Better except nobody knew about it from outside the area, Steve. It was a good joke.

BRETT HARTE MIDDLE SCHOOL, OAKLAND, CA:

That's alright.

TRIXIE JOHNSON:

Insider joke.

BRETT HARTE MIDDLE SCHOOL, OAKLAND, CA:

That's okay. It's an insider joke.

ROD DIRIDON:

D.K., do we have any other groups?

DR. DONGSUNG KONG:

No, that's it – New York, Oakland, San Jose, and Virginia. That's all. And we are waiting for Washington, DC.

ROD DIRIDON:

Okay, why don't we fill the time by doing some things between the different centers while we're waiting for Washington, DC to come up on the network. And what we might want to do is have one, whoever the lead student is – do you have one spokesperson student, teachers?

MEADOWS ELEMENTARY SCHOOL, SAN JOSE, CA:

We have two groups. Each of the groups is sharing in their presentation.

ROD DIRIDON:

I see. Do you have a spokesperson for each group?

MEADOWS ELEMENTARY SCHOOL, SAN JOSE, CA:

They're all speaking actually.

ROD DIRIDON:

Oh, that's going to be fun.

MEADOWS ELEMENTARY SCHOOL, SAN JOSE, CA:

These are really good presentations. You guys really did a good job.

TRIXIE JOHNSON:

You didn't have a lot of time to do it. Very impressive.

ROD DIRIDON:

Maybe he's got a job for you guys.

PETE CIPOLA:

Yeah, come to work for us. We need you.

(Laughing)

You're available? At a right price?

TRIXIE JOHNSON:

I think what Secretary Mineta is going to talk about is the potential for working in transportation when you become an adult, and the kinds of things you need to do in school to be ready for those kinds of jobs.

ROD DIRIDON:

Are we broadcasting to all the different centers now?

UNKNOWN:

Well, we don't think Washington is connected yet.

ROD DIRIDON:

Why don't we say what Trixie just said again. Trixie Johnson, again, is the retired Vice Mayor of the City of San Jose, and Research Director for the Mineta Transportation Institute. She was noting that when Secretary Mineta comes up in the Washington connection, as soon as they make that connection, he's going to be talking to you about selecting a career in transportation. And remember, he is the number one person in the United States, probably in the world, as it relates to transportation. He is what is called a Cabinet Member, and if you studied your civics, you know that the cabinet is the group that advises the President of the United States. And he is in charge of all transportation, everything from airplanes to boats to mass transportation of cars, to bicycles, to people who walk. That's all under Secretary Mineta. And we especially like Secretary Mineta because he was born and raised here in Silicon Valley, in San Jose. He went to local schools. He was student body president at San Jose High School. And he went to the University of California, Berkeley. Then he became City Council… he had an insurance company and became a City Council member in San Jose… a Mayor of San Jose and a Congress member representing San Jose in Washington. And then more recently, he became the Secretary of Commerce under President Clinton. And then the Secretary of Transportation under President Bush.

And he'll be here to talk to you about your future and the need the transportation industry has to have you involved in transportation as a career. What he is going to stress is the need for you to take technical courses while you go through high school. I know it's a lot nicer to take art and basket weaving because it's easier, but the math courses and science courses are really necessary. You're all smart enough. There's no question about that. It's just a matter of studying hard enough and getting through those math and science courses, so you can take the technical courses in college so that you can become a professional in the transportation industry, doing everything from designing new rail lines to designing new rail vehicles or electric cars. I drive an electric car. It took some real smart people to design that car, or to operate those systems like Mr. Cipola. It's very complicated. He has over 3,000 people working for him to make sure the buses are out on the road every day working and the rail system works for you. So those are the kinds of things the

Secretary is going to be sharing with you. And listen carefully because he's taken very valuable time to be with us, assuming that Washington can tap into our network of videoconference facilities.

Yes, sir?

QUESTION:

I have a question. I live over by 15th and San Antonio and every day I drive by San Carlos and I notice that electric car project that they have on the corner there. Is the university involved in that project or is that independent?

ROD DIRIDON:

It's independent. There are some people from the university who are involved in it, but it is an independent demonstration project to show people that electric cars actually do work. And indeed they do. I have an electric car. My wife has an electric car. And, in fact, we have three electric cars. I have one that I retrofitted back in 1996. It was an old Porsche. And the two new cars are General Motors EV1's, and they're really hot rods. You will get from 0 to 80 MPH faster than you ever should do it. And then it can't go beyond 80 because it's governed. There's a stopper. It won't let you go faster than 80, otherwise, they've had them going out on the test track over 180 MPH. So they're not wimp cars. They're hot rods, except that they run on electricity. So they're fun to drive. They're clean. They don't pollute the environment. And they don't require us to import oil.

You know, when we import oil from a foreign country, we pay much higher prices. And then we get into situations like we did with the Gulf War, where we had to go fight a war in order to make sure we could continue to get oil from Kuwait and the Saudi Arabia area. So electric vehicles are very important. And they're very inexpensive right now, because the state government wants you to use them, so they give you incentives. I get paid $250 a month out of the $480 a month that the lease costs to drive an electric vehicle. Which means I only pay $230 a month lease on the car, and then there's no gas costs. So I wind up almost making money on the car. So it's a good thing.

So those are the kinds of things you can get into if you take the math and science courses in high school. Those are things you have to decide pretty soon. And then you can go on to college and take the technical courses to become involved in inventing the next generation of vehicles that we're going to be riding.

TRIXIE JOHNSON:

I understand that Washington is very close to being connected…

GARNETT PATTERSON MIDDLE SCHOOL, WASHINGTON, DC:

Yes, Washington is here.

TRIXIE JOHNSON:

Washington is in?

GARNETT PATTERSON MIDDLE SCHOOL, WASHINGTON, DC:

Yes, we are.

TRIXIE JOHNSON:

Alright. Welcome. Is Secretary Mineta there?

SECRETARY NORM MINETA:

I'm here.

ROD DIRIDON:

Hi, Norm. Hey, how about everybody say, "Hi Norm."

PARTICIPANTS:

Hi, Norm.

TRIXIE JOHNSON:

They might be coming in at a lower speed. They might look a little jerky.

ROD DIRIDON:

Let's see if we can explain what's happening now. Is everybody on the net? Everybody hearing me? The five sites we have are Washington, DC, with the American Public Transit Association sponsoring that site, with Secretary Norm Mineta; and then we have Hampton Roads Roanoke School in Virginia; we have Brooklyn, where the sponsors are with us and not the class this year, but next year we'll have a class; then we have Oakland, California sponsored by the Metropolitan Transportation Commission; and we have San Jose here sponsored by the Valley Transportation Authority. The Hampton Roads location is sponsored by the Transportation Commission of Hampton Roads.

So the reason why we waited a little bit here is because we were waiting to get Washington into our net. Now everybody else is going to see the Washington site in a little bit of jerky way. They're using a little different technology, which doesn't have quite the capacity of the other ones. So, when Washington communicates with us, they're going to look a little bit jerky, and we'll just

have to ignore that. They're with us and that's very important. And we really appreciate them trying very hard, especially at the very last minute, to become compatible with us.

And so I think we're ready to start now.

(Pause)

Alright. My name is Rod Diridon and we will begin the session now. One of the operating processes that we can all abide by is that you don't speak unless you want to communicate with everybody. And the reason for that is if you speak, your microphones are voice-activated, and you will cut everybody else out and we'll only hear what you say. So if you're chatting with your friend next door and you're saying something that's very private, then everybody in the whole United States is going to hear it. So please, don't speak, even whisper – don't even whisper to your neighbor unless you want everybody to hear it. Then when you want everybody to hear it, make sure you introduce yourself by saying your name and the city from which you're communicating. That way we can keep track of who is on the network and who we're hearing. So that's the guideline for what we're doing. Now with everybody having that guideline, we'll begin the videoconference. So we're starting now.

My name is Rod Diridon. I'm the Executive Director of the Mineta Transportation Institute. The Mineta Transportation Institute was founded in 1991 in the Intermodal Service Transportation Efficiency Act by Congress that was authored by then Congressman Norman Y. Mineta. And we're very proud to be named after Congressman Mineta, who is now the Secretary of Transportation. We're especially proud in California because Secretary Mineta is from our area. He grew up in San Jose. He was a businessman here. He was a Student Body President of a high school here. And I won't say anymore about that, because he's going to be introduced very thoroughly by the president of the American Public Transit Association in a moment. But let me give you just a few more minutes on the Institute.

The Norman Y. Mineta International Institute for Service Transportation Policy Studies, which we call the Mineta Transportation Institute, is located at San José State University. It serves all of the United States in terms of doing service transportation policy research and service transportation management education. We have currently 30+ research projects going on in seven countries in the world. We have over 50 Ph.D level researchers. These are top researchers supported by well over double that research assistants. They're working on projects that will change the world, we hope, and make it a better place to live. And we also have a video facility in terms of our web page,

Transweb. You can tap into that wherever you are and find out more about the Mineta Transportation Institute.

In addition, we have a Master of Science in Transportation Management, which is allowed to be granted through the California State University system. And that teaches you to become a Master Manager in transportation. And someday, we hope that all of you will be involved in that Master's program.

Let me introduce now to you the president of the American Public Transit Association, who is in Washington, DC. The American Public Transit Association is that association of all of the transit managers in the United States, over 1,000 members of transportation agencies throughout the United States. They have one association headquartered in the nation's capitol, in Washington, DC. That association is called the American Public Transit Association and the president of that association is Bill Millar. And Bill Millar is now going to welcome you. And by the way, whoever is standing up and sitting down is standing up and sitting down in front of the camera, Bill, so caution that person not to do so. And so now we'll go to Bill Millar, the president of the American Public Transit Association, to introduce the Secretary of Transportation for the United States of America.

BILL MILLAR:

Thank you very much, Rod. And on behalf of all 1400 members of the American Public Transit Association, we welcome all the students and teachers and everyone who is involved in this historic broadcast. And we want to particularly thank you, Rod, and all of the staff of the Mineta Institute who have worked so hard to make this happen. All of us know the importance of working with the future generations to make sure that they are able to contribute and make the world a better place. And certainly this type of activity will help people understand what the choices are that are before them as they grow up.

As you said, my purpose here this afternoon is to introduce the Secretary of Transportation, Norm Mineta. And I certainly want to do that.

Secretary Mineta became the Secretary of Transportation in January of 2001, after he had been nominated by President Bush and after he was unanimously confirmed by the United States Senate.

Now as you have indicated, Secretary Mineta has a long background in public service and public transportation issues. Prior to joining the Bush administration as the 14th Secretary of Transportation, he was the Secretary of Commerce under the previous administration, so he has broad executive

branch governmental experience. Prior to that, he was the Vice-President of the Lockheed Martin Corporation. And for 20 years prior to that, he served as a member of Congress representing the Silicon Valley, and particularly San Jose and its immediate surroundings. During the time that Secretary Mineta was in Congress, he served as the Chair of the House Public Works and Transportation Committee, and Chair for a time of its Surface Transportation Subcommittee. Now this is the committee and subcommittee in the House of Representatives that helps set national policy for public transportation and highway transportation and all forms of transportation in America. Now during his career in the Congress, he championed for investment in transportation infrastructure – building roads, building transit systems, and operating them for the benefit of the public.

He was the author of one of the most famous pieces of legislation in surface transportation, namely the Intermodal Surface Transportation Efficiency Act of 1991, which led to major changes in the way we fund and prepare policy in this country for transportation.

Now, Secretary Mineta entered public service as a member of the San Jose City Council and later became the Mayor of San Jose. Rod, as you've indicated, the institute is named for Secretary Mineta, and I am very privileged to serve as a member of the Advisory Board of the Institute.

So it is a very great pleasure for me now to introduce to you Norm Mineta, the Secretary of Transportation, and we'll ask Secretary Mineta for his thoughts on opportunity for transportation in America. Please join me in welcoming Secretary Mineta.

KEYNOTE ADDRESS

SECRETARY NORM MINETA:

Bill, thank you very much for the wonderful introduction. And to everyone across the country, good afternoon, or good morning depending upon where you are.

So on behalf of Miss Willets and the wonderful students from Garnett Patterson Middle School here in Washington, DC, we'd like to welcome all of you from various parts of the country to this symposium.

Rod, I'd like to just question about whether or not you were referring to me as the big jerk in Washington, DC when you were talking about the technology of this video system being a little bit jerky. And I got a little sensitive when you were mentioning that. So in any event, I take it you were talking about the technology and not about the speaker.

In any event, I am really glad to be with all of you to spend some time to share some thoughts about my two favorite subjects – one of them is transportation, and the other is sustainable development.

Last January, when President Bush and Vice-President Cheney asked me to join them their team as Secretary of Transportation, I was very proud to accept. After all, more than 30 years of my career has been devoted to the transportation business.

Now the job of developing and maintaining our nation's transportation system is not only exciting, but it is becoming increasingly challenging. It has a lot to do with the fact that our population is growing, and there are more Americans than ever who are travelling by car, by airplane, by rail, by ships, and by virtually all modes of transportation.

Now, not suprisingly, this growth trend is expected to continue as our population increases. So this means that we need to think more about how our world can accommodate this kind of growth and at the same time have a safe and environmentally healthy place to live.

We also need to consider how we can ensure that our transportation system will continue to move people and goods safely and efficiently based on future growth.

Now here are some interesting and startling facts about our transportation system. Last year, almost 700 million people traveled by airplane in the United States. By the year 2010, almost one billion are expected to fly.

Now transportation represents about 11 percent of the American economy. And our nation's transportation infrastructure system, including highways, bridges, and subways are valued at something like $1.75 trillion.

Another interesting congestion – traffic congestion, the kind of gridlock we all hear about when we see ourselves trapped in traffic-costs motorists about $74 billion a year in wasted time and fuel costs. Americans waste more than 14.5 million hours every day stuck in traffic.

Traffic gridlock in and around our cities wastes an estimated 6.7 billion gallons of gasoline every year and of course that adversely affects our environment.

Now on the other hand, public transit will reduce auto fuel consumption by about 1.5 billion gallons of fuel each year, reducing driver costs, improving our environment, and reducing our dependence on imported oil.

Now America's networks of waterways move about 2.2 billion tons of goods, both domestic and foreign every year. And more than 90 percent of our international trade moves by water. So all of these facts not only illustrate how much our transportation system is growing, but also how much it contributes to our economy and our quality of life.

We can also see that the environmental impact of transportation is and will continue to be a challenge for the nation's transportation planners and policymakers.

Now congestion, even in small cities, and towns, and sprawl, that is development that is reducing our nations open space and forests, are now major issues being debated in communities throughout our nation. Today a majority of Americans want transportation planners and local government to find ways to relieve congestion and, at the same time, to save some land for parks and our enjoyment.

Now sustainable development - and that's defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" – and smart growth. Smart growth is defined as "that growth that enhances the value and character of existing business and community investments and accommodates growing regional populations." So these two approaches of sustainable development and smart growth are two approaches to try to reduce traffic gridlock and sprawl that we hear the most about every day. There is even a smart growth organization focused not only on reducing sprawl, but on the very important job of revitalizing cities.

Today you will learn more about these and other issues that affect both transportation and the quality of life in America.

For instance, did you know that transportation accounts for two-thirds of the use of petroleum in the United States. The U.S. petroleum consumption today is projected to increase by some 6.3 million barrels per day between today and the year 2020. Now President Bush is concerned about America's dependence on oil imports, oil that comes in from foreign sources; and also, about the energy shortages as we are experiencing in my home state of California. And that's why he recently released his energy plan that calls on Americans to conserve energy as much as they can. Now this plan encourages people to do their best to conserve energy and improve our environment, including things like carpooling, taking public transportation to work or to school, combining errands by cars into one trip, planning your trip to avoid congestion, and performing regular maintenance on our cars in order to make sure that they emit less pollution. We all can and all of us should do our best to protect our environment for ourselves, but more importantly to protect our environment for future generations.

Now let me focus on all of you and your own futures. It's really not too early for you all to start thinking about what you would like to do someday to make a living. There are careers in transportation that are very challenging and very exciting. They go from designing high-tech cars and trains to building bridges and tunnels. Or you could focus on aviation and help create a better, more technologically-advanced airport, or maybe even building space stations.

So if you think you would like to pursue a career in transportation, or any technical field, I would encourage you to take plenty of science and math courses. Those are very important foundations for most careers in transportation.

But no matter what career you might want to pursue, you also need to know how to communicate, both in terms of writing and in speaking. So I encourage you to work hard to get good grades in these courses as well. Now this is especially important for those who want to pursue public service. Maybe someday you may want to serve as a mayor, or as a governor, or perhaps even run for President. Because whatever you do in public service, you will certainly be involved in making decisions about transportation.

Now it's my hope that what I've had to share, some thoughts with you, will really broaden your thoughts about what you would like to do about considering a future career in transportation.

Now I speak from experience when I say that I have enjoyed working and helping to make decisions in this very exciting and interesting field of transportation.

So to all of you, let me just say what most of us have had to do in the past. That is to do well in school, to make sure that we are preparing ourselves for our own future, so that we might, if we are interested in transportation, to be able to pursue that career in order to create a safe, a very efficient, and very environmentally friendly transportation for all of us to be able to use and enjoy, wherever that work might take us.

So again, to all of you, let me encourage you to do what you've done here – be innovative in terms of the project that you've put together for this symposium, because I know that this will be an opening for your own future. And we just want you to go through that opening to the bright future that you have ahead of you.

Thank you very much. And to all the locations across the country, my best wishes to all of you, and let's go on with the balance of the program. Thanks a million, everybody.

PRESENTATION OF PROJECTS

ROD DIRIDON:

Secretary, thank you very much. We appreciate you taking the time from your terrifically busy schedule to be with us, and for sharing your insight and motivation with these youngsters across the nation.

Let me diverge for just a moment by noting that this program, this symposium, has been coordinated and organized by Dr. Dongsung Kong, Political Science Professor at San José State University. If we could have the camera focused on Dr. Kong for a moment, we appreciate it D.K. You've done a wonderful job and thank you very much. And it looks like you've found yourself a job annually. We thank you.

Let me introduce Trixie Johnson. Trixie Johnson is the Research Director for the Mineta Transportation Institute. She's also the retired Vice Mayor and longtime Council member for the City of San Jose. She's also been the Chair of the national and state league of cities committee on environment. And she's been involved in the environment and transportation legislatively, and as a member and Chair of the League of Women Voters for many years. She's a Phi Beta Kappa graduate, which means she's a very smart person. And we appreciate her involvement in the Mineta Transportation Institute. Our Research Director, Trixie Johnson.

TRIXIE JOHNSON:

Thank you, Rod. Now we come to the best part of the program, which is all of you. And we're going to start by introducing your sites and your sponsors. These are the people in the organizations who came out and recruited your school to be part of this program. And each in turn, they will introduce the school.

After we finish those introductions, we'll go back and have the projects presented by the students.

So let's begin first by introducing Pete Cipola, who is the General Manager of the Valley Transportation Authority here in San Jose.

PETE CIPOLA:

Thank you, Trixie. I'm really pleased to introduce our sponsored class from Meadows Elementary School, and their lead instructor, Randy Landrith. Really I think his enthusiasm for this project has made the students really look within themselves. They worked on six different projects and I think if time allows,

we're going to be able to present two of those, hopefully. So, Meadows Elementary School.

TRIXIE JOHNSON:

Thank you very much. Our next site is in Oakland, California and the host is Steve Hemminger, who is the head of the Metropolitan Transportation Commission, which runs the transportation planning and other activities for the nine counties around San Francisco Bay.

STEVE HEMMINGER:

Thank you and good morning to San Jose and good afternoon to everybody else. I am pleased to be here with the Brett Harte Middle School from Oakland. Joining me at the right is Kathy McKay, who is a sixth grade science teacher, and her science class is here as well as members of her girls' science club, which Ms. McKay sponsors. Brettt Harte has about 900 sixth, seventh, and eighth grade students. Ms. McKay has been a teacher there for four years, but overall a teacher for 26 years. And I am looking forward, very much, to their presentation today, as well as the presentations from all over the country.

TRIXIE JOHNSON:

Now we're going to move to Washington, DC, and you've already met the host there, Bill Millar, who is the head of APTA, the American Public Transit Association. And Bill, why don't you introduce your folks.

BILL MILLAR:

Trixie, thank you very much. I'm very pleased to introduce the eighth grade class from the Garnett Patterson Middle School, and to thank the teacher, Charmaine Wilks, who has been the leader in this particular effort. She along with science teacher Joe Mongel, and with the support of their principal, *(Inaudible)* Ellison, have supported these students in a project that you'll meet in a few minutes.

Now the Garnett Patterson Middle School has a long tradition. It is the oldest African-American middle school in the country, and many very famous graduates have come from this school. For example, the famous singer Marvin Gaye was a graduate of this school; the famous singer, Pearl Bailey, was a graduate of this school; Hinton Battle, a nationally acclaimed Broadway actor, was a graduate of this school; and finally, Congressman Walter Huntroy, Jr, who served with then Congressman Mineta, was a graduate of this school. So it is a school with a very long and proud history, and I think you'll see the Panthers of Garnett Patterson Middle School have a good project to show us when that time comes. Thank you.

TRIXIE JOHNSON:

And last, we're going to move to Hampton Roads, Virginia, and our host there is Michael Townes, who is the General Manager of the transit system there in Hampton Roads. And I didn't see Michael in the original picture, so I'm not sure if he is present. If not, could we have the teacher step forward and introduce your class?

ROSS CARNEY:

My name is Ross Carney, and I am the Community Relations Manager for Hampton Roads Transit, and Mr. Townes is away giving a presentation on behalf of Hampton Roads Transit. And I'm here with the students from Ruffner Middle School, the pride of Norfolk. They have a lot of questions to ask because we're getting ready to begin a light rail transit system starter line here in the city of Norfolk.

TRIXIE JOHNSON:

Good. Hope you enjoy it as much as we do ours. Mr. Diridon is the father of light rail transit here in San Jose.

Okay, it's now time to see what you've been doing in your classrooms, and we're going to start with the school here in San Jose, with Meadows. They have two projects they are going to be presenting. And like all of you, they will only have five minutes to present each project.

Now let me tell you something exciting about these projects and what's going to happen afterwards. Not only are we going to be printing a book, which will be including your name. That's why you're supposed to include your names when you talk. But after today, some of the people who are watching this are going to select the winning project. And once your project is selected as the winner, you choose one student from your class, your teacher, and a parent to come to San Jose at the end of the month, on June 30, and join us at our annual banquet. You'll meet Secretary Mineta in person. He's supposed to be here. The Congressman who is the leading Democrat for transportation in the Congress of the United States will be here. And, the head of transportation for the State of California will be here. And we will present to you and your schools a cash award for winning the presentations that are made today.

So that's just a little incentive to do a good job in your presentations. And as I said we'll start with San Jose. So from Meadows Elementary School, the first project you will see is "Pedal Power", and they will take five minutes for this presentation. Pedal Power, come up front and do your thing.

MEADOWS ELEMENTARY SCHOOL, SAN JOSE, CA:

The name of our project is called “Pedal Power.” And my name is Mai Tram Nguyen, Michelle Vo, Jimmy Lam, Diana Young, Gissele Reyes, Mary Gonzales.

And we’re all from San Jose. And now, Gissele is going to tell us about our project.

Our report is about a city having pedal power on Sundays. The city we have chosen is San Jose. This type of transportation will help by not polluting, saving money on gas, fit in the city, and at the same, it will help us exercise. This kind of transportation is *(Inaudible)* energy. Everyone in the pedal car or cab will have to pedal, except old people, babies, or pregnant women. The bikes will be painted green and will be *(Inaudible)** by the property of San Jose, that way we’ll be able to tell which bike belongs to the city, and everyone will be able to use the 300 bikes all over downtown San Jose on Sundays.

For the police we will have pedal cars with a siren on top. That way we will know when they are chasing someone. Open street stores will be provided only on Sunday since that day will be pedal power day only. The bikes will have storage containers for shopping goods.

And now, Daniel, has how does it help the environment.

It helps the environment by not polluting air, and it’s a great help to old and young people because they can move around safely.

And now, I’ll tell you about what energy sources this needs. The energy source that we need is the strength of our feet to move the bikes. There will be more lots more work for the bike companies because we will need a lot of bikes for everyone.

And this is a map. Okay, inside here will be where our pedal power system will be. And then there’s East of 87, South of St. James, West of 10th Street, and North of Williams.

And now Danielle is going to tell us about how the carriage meets.

The carriage, the bike, and the pull to hold up the bike are all made of metal. The leather seats inside the carriage are made of leather. The wheels are made of rubber. And that’s what our carriage is made of.

And now Jimmy is going to tell us some information.

There will be some signs put up for “Bike Only,” so then we will know that cars are not allowed that day.

And now Mary is going to tell us about the carriage.

Our model is called “Pedal Power.” It can hold four people inside the cab, and there will be two tandem bags pedaling the cab. Four people will pedal the *(Inaudible)*. This is a sunroof, so people can look out and have sunlight. The cab is painted green because of the environment and the boles will be attached to the carriage by a metal pole.

And that’s our report.

(Applause)

TRIXIE JOHNSON:

Just to keep you all oriented, that took them just over 4 minutes to present, so they were right within the time.

And the next project, also from San Jose Meadows School, is Windstar.

MEADOWS ELEMENTARY SCHOOL, SAN JOSE, CA:

Our project is about the Windstar car by: Yasmin Aranda, JeMaire Ayap, Christian Zarate, Marwin Balanza, and David Nguyen.

Yasmin is going to tell us about the sustainable energy.

There are many different forms of sustainable energy. The sustainable energy form we are using for the solar-powered Windstar car is wind. We are also using solar energy. We can do that by setting our solar panels, saving energy, and then plugging in your car at night to recharge the batteries. Also, our fan is solar-powered. Those are the two sustainable energy forms we use.

Christian is going to tell us about the Windstar car.

The Windstar car is a vehicle that uses two elements – the wind and the sun. It is powered by a battery that is charged every day by solar power. It saves energy during the day, and charges the battery at night with all the energy that is saved. It is powered by wind when the fan is on. The wind is used because it is non-pollutant. That is our invention.

Jeannie will tell us about this car and how it helps the environment.

The Windstar car is helping the environment is many ways. First , it helps the environment because it causes no pollution. Second it helps because it does not cause smog. And that also helps make us happy *(Inaudible)*. Third, it helps because you don’t have to buy gas. The wind and the sun are free. So in the end, you save tons of money. And that’s how the Windstar car helps the environment.

Marwin will now say our report.

Our project is called the "Solar-Powered Windstar Car." We named it that because it is powered by wind and the sun. We chose to use those two substances because they are non-pollutant. We also chose them because after the solar and wind detractor is built, the resources are free. They are also no threat to animals, the world, or us. Also, we chose it because the solar panels are already accessible to be built and are not costly. They are the most commonsense articles. Wind is also somewhat valid to be used. They are always working, especially if you set them up in windy areas. Those are the reasons we chose wind and solar power. The way our project works is, it is a car with a large fan strapped in the back. That is powered by a battery. The battery is charged up by energy created with solar panels that are set up on top of your garage, the parking lot to your residence, or if you're out of town, in the hotel parking lot.

Your car can also be powered by wind. The wind generators can also be set up in windy places and they can create energy that can charge the battery and that will run the car until it needs to be recharged. That is all about the Windstar car and how it works.

This is our whole report.

(Applause)

TRIXIE JOHNSON:

Thank you very much.

We're now going to go to Oakland for the presentation by the students there, and that would be at Brett Harte Middle School.

BRETT HARTE MIDDLE SCHOOL, OAKLAND, CA:

Thank you, and I think the students will stand up and introduce themselves. And maybe I can help by holding up the audiovisual display. So go ahead.

My name is *(Inaudible)*. My name is Erica Williams. My name is *(Inaudible)*.

A couple of days ago we did this experiment about acid rain and the materials we used are a cap, choke, and vinegar.

First, we designed *(Inaudible).* Then we put the vinegar in a cup and put the top down.

The third picture shows that the chalk goes into the cup with the vinegar inside. And the vinegar eats the bottom of it.

Our final part – vinegar ate more than half of the chalk and some chalk got in the vinegar all the way. On the bottom of the cup is a lot of chalk parts and they look like ashes.

(Inaudible).

The other picture is one picture when the acid didn't get on it, and the other one, the acid got on it.

And what have we learned about acid rain? Doing this experiment about acid rain, we learned a lot of things. One of the things is that the acid rain is dangerous. It is bad for peoples' lungs. Also, it makes statues look bad and makes plants and trees look bad. It takes out their leaves and makes branches look old. And, acid rain is made out of burned fossil juice.

This experiment helped us learn a lot of things about acid rain. Thank you.

(Applause)

TRIXIE JOHNSON:

And now we're going to go to Virginia, and that's the folks at Ruffner Middle School.

RUFFNER MIDDLE SCHOOL, NORFOLK, VA:

We're participating only in the discussion segment, but we're delighted to be here.

TRIXIE JOHNSON:

Okay, so then we have the three projects in contention then for the project award. And I want to thank you all for the work…

GARNETT PATTERSON MIDDLE SCHOOL, WASHINGTON, DC:

You have one more, Washington, DC.

TRIXIE JOHNSON:

Oh, pardon me. How did I miss Washington? Sorry about that, thank you. Let's go to Washington, and that is Garnett Patterson. Let's see what you did.

GARNETT PATTERSON MIDDLE SCHOOL, WASHINGTON, DC:

Hi, my name is Nicole Burns. Hi, my name is Kyle Wilson. And, the name of our project is the "Pilot Extinguishing Way." And it took three hours to make.

First, we had to measure the wagon to make measurements for the wood. Then we cut the wood down to see if it would fit., After we cut the wood, we fit it into the right places. We had to cut some pieces down so it would be comfortable for the *(Inaudible)*. After we cut the wood down, we nailed them together. After we nailed them together, we taped them to the wagon and then Joshua *(Inaudible)*.

The purpose of our project was to find a new mode of transportation that doesn't need fossil fuel, coal, and other non-renewable sources. The *(Inaudible)* is action and reaction. The action is *(Inaudible)*, the driver, pulling a *(Inaudible)* and the wagon moving. The air that comes from the fire extinguisher is representing natural gas.

We can't demonstrate our project because there's not enough space, but we enjoyed working on our project.

(Applause)

TRIXIE JOHNSON:

Okay, now I think we have seen all of the projects that we have scheduled on the program today. And we will be looking at those and determining who comes to the banquet. And we will let you know in a couple of days so that you can be making your arrangements to come and join us here in San Jose at our banquet. One of the things we hope to do with this is to open up your imaginations, because you're young enough that you may think they've told you this a lot, but you haven't been told nearly as much as us old folks – "You can't do that" or, "We tried that and it didn't work." You're free to imagine. And you have a lifetime to imagine better transportation than we have now. And we hope this just started you thinking about what transportation can and will be like when you're in charge of the world.

Okay, we're now going to have an open discussion among the sites. And Rod, you're in charge of that.

QUESTIONS AND ANSWERS

ROD DIRIDON:

Thank you all very much for your very creative projects. And I can just imagine that wagon back in Washington being pushed along by the impulse from the fire extinguisher representing natural gas. They weren't able to show us that because of the space, but we could all visualize that as part for their presentation.

So now we have an opportunity that many of you may probably have never had and will probably never had again. And that's to talk to your peers, the people in your age group and your time of life, across the United States. And to do that, what you need to is raise your hand if you have question or a comment for the group. And when you raise your hand, your leader in that area will recognize you, say your name into the microphone and your location, and then ask your question or make your statement. And then, whoever would like to comment on that from another place within the United States can do so. And we'll proceed on through until the end of the 11:00 o'clock hour. We have quite a bit of time because we went much more quickly through the projects than we thought we were going to. So now begin thinking, and in just a moment we're going to ask if you'd like to raise your hand and ask a question of anybody in the United States in your age group that is part of these symposia classes scattered around. Are you ready?

Okay, we have a question right here. And I'll yield now so that Pete Cipola, who is the moderator for the program here, can recognize this question.

QUESTION:

My name is David Nguyen and I'm from San Jose. Why are we still using nuclear power if we know that the waste is poisonous?

PETE CIPOLA:

Did you all hear the question? Did you hear the question?

ROD DIRIDON:

Well, let me take a crack at it, and I'll try to respond. Please realize that I'm not in favor of using nuclear power. But I'll try to rationalize the reason why other people might be in favor of it.

Nuclear power does create very inexpensive electricity, because it has huge energy from the radioactive, nuclear materials – plutonium and uranium. And so it creates huge energy and it creates inexpensive electricity. The problem though is that the by-product, the waste product, from nuclear power plants is

radioactive and dangerous for hundreds and hundreds, and sometimes thousands and thousands of years. And you can't even get near it without it killing you. And so it has to be encapsulated and surrounded by protective material and then stored in someplace where nobody can get near it for longer than human beings have been alive in the world. And that's hard to imagine. And so far, a place like that has not been found in the United States. And so until that material can be properly stored or re-refined or re-used or in some way protected so that it can't hurt people or animals, or anything on earth, there will always be questions about the use of nuclear power. But the reason – to answer your question specifically – why are we considering using it – and I know the President has recently suggested that we go back and look at nuclear power as a source of energy – the reason it would be considered is because of our shortage of energy in the United States. So, that's a specific answer to your question. It's a very good question, though.

If anyone else in the audience has an answer, any of the other proctors or any of the other transportation experts or students has an answer, please chime in and then we'll go to the next question.

PETE CIPOLA:

Anybody else?

STEVE HEMMINGER:

Rod, this is Steve Hemminger. I don't think we have a better answer than yours, but we have another question. Can we proceed?

ROD DIRIDON:

Yes, please.

STEVE HEMMINGER:

Can you stand up, introduce yourself, and give your question. I think our questioner got bashful all of a sudden, Rod.

GARNETT PATTERSON MIDDLE SCHOOL, WASHINGTON, DC:

We have a question in Washington.

RUFFNER MIDDLE SCHOOL, NORFOLK, VA:

We have a question in Virginia.

ROD DIRIDON:

Let's go to the Washington question first.

GARNETT PATTERSON MIDDLE SCHOOL:

Okay. Well Carl, who was one of our presenters, has a question.

QUESTION:

Does the Federal government have any plans for developing some form of sustainable transportation?

ROD DIRIDON:

The question was – does the federal government have any plans on developing sustainable transportation as I heard it. And Bill, you're probably closest to that answer. And maybe you'd like to offer a thought. And then, maybe Pete Cipola, who is your incoming chair of the American Public Transit Association, would like to comment on it also.

Bill, would you like to begin?

BILL MILLAR:

Sure, I'd be glad to. Let me just say that you were right, Rod, that Secretary Mineta had to leave, but he certainly enjoyed his time with us.

Yes, part of the effort of the federal government is to try to find better ways to do transportation in a sustainable manner. For example, encouraging public transportation, which uses far less resources and still allows people to travel and do the things they need to do, is a good example of that. But the government also helps to sponsor research around the country and do things like remove fuels and other things that would enable far more sustainable systems.

So Pete, I'll turn it over to you to pick up from there.

PETE CIPOLA:

I think one of the projects that we are working on along with the California Air Resources Board might prove interesting and perhaps next year a potential project for a similar class. We're moving into the use of fuel cell buses and will actually be having three "zero" emission buses on our system within the next two to three years. This is a brand new technology. It is obviously a sustainable type of an energy source that will prove to be very exciting. And we see fuel cell energy moving not only into stationary sources to provide electricity, but also into the mobile sources. So I think these types of programs and projects will prove to be very exciting for transportation in the future.

TRIXIE JOHNSON:

I want to add just another quick thought. Part of what makes transportation use so much energy is that we've spread ourselves around so much. So part of what the government is sponsoring in terms of research are ways to look at the smart growth that Secretary Mineta talked about, ways that we can plan our

communities so that we don't have to use the fuel to get around so much. And that we're closer to where we need to be, where it's possible to maybe even walk or bike, stay a little healthier and get around that way. And that's also a way of looking at sustainable transportation.

ROD DIRIDON:

Steve, you at MTC are working with the Association of Bay Area Governments and the Bay Area Air Quality Management District and the local governments to talk about smart growth and more composite growth, and more coordinated transportation systems. You're also aware of what's happening at the state and federal level in regards to incentives for people to use electric automobiles and less-polluting automobiles. Would you like to comment on those?

STEVE HEMMINGER:

Yes I would, Rod. I think you mentioned before the program officially started that you're driving an electric car and that the government gives you quite an incentive to do so by helping defray the cost of buying it and operating it. MTC just bought one of the hybrid vehicles that you've probably read in the newspaper that you don't even have to charge. It's part electric and part gasoline, and while you're using the gasoline engine, it charges the electric battery. And we've also received some subsidy from the government. So there are ways that the government can help all of us make some choices that improve the environment. We at MTC have a new program that we have started called Transportation for Livable Communities. And that's our way of trying to offer an incentive to transit agencies like the one that Pete Cipola runs to local governments so that they can work together and include more development, more housing, more retail activity around the transit stations that we're building around the Bay Area. Because if folks can live closer to transit, they're more likely to use it. They're able to walk to the station instead of having to drive – and to travel around the Bay Area that way.

Rod, I also have a question here if I could.

ROD DIRIDON:

Steve, we've promised to go to Hampton Roads next if we could, and then can we come right back to you?

STEVE HEMMINGER:

Thank you.

ROD DIRIDON:

Okay, let's go to Virginia.

QUESTION:

Hi, my name is Nike Kimo, and I'm from Norfolk Virginia. This question was directed to Secretary Mineta, but since he's not here, I'll just ask the group.

In the Philippines, there is a law that says certain people can't drive. Like if the last number of the license plate is 7, they can't drive on the 7th, the 17th, and the 27th of each month. This reduces traffic and the amount of pollution that gets into the air. Is there anything like this being done in the United States?

ROD DIRIDON:

Would one of our proctors like to comment on that? I don't know of anything that's under consideration, but maybe one of the others might.

PETE CIPOLA:

I don't know. There are no plans that I know of right now to implement a program like that in the US. However, some of us remember 30 years ago, in the 1970's, when there were fuel shortages. And such a plan was implemented in the United States – an odd numbered license plate was allowed to buy gas one day, and an even numbered license plate was allowed to buy gas the next. I think that Secretary Mineta would say that they hope that the steps that have been proposed will make it so Americans don't have to be in that situation. And that really goes back to something that Steve mentioned and Trixie mentioned that I think we ought to talk about, and that is – choice. And personal choice. In the end, we can talk about sustainable transportation. We can talk about different ideas of relocating housing and relocating our offices and other workplaces. But in the end, it's each American that has to make a choice as to how they live – are they going to choose to use fuel wisely, or are they not going to? And so certainly as you look ahead in your life and as you prepare yourself for your life ahead, that's a big issue. You don't have to necessarily do what everybody does. You can make your own choice and that ultimately will determine a lot of our willingness to have a sustainable society.

ROD DIRIDON:

Bill, thank you very much for your comment. May I also remind us that we have three very important experts with us in New York, so if our New York experts would like to chime in with remarks, we'd sure appreciate it. There is a lot of knowledge there in New York. The "Big Apple" has a lot to offer, and we enjoy your comments.

We only have time for a few more questions, so let's proceed with those additional questions now. I think Steve, you have a question?

ROD DIRIDON:

We have Virginia up. Why don't we go ahead and take Virginia.

QUESTION:

Yes, my name is Shamika Brown, and I'm from Norfolk Virginia.

To make electrical cars popular, don't you need some type of advertisement to tell the society about it?

ROD DIRIDON:

The answer is obviously yes, but let's get more to the answer. We have Pete Cipola who has really been an expert in marketing throughout his time as a professional transportation manager, and maybe Pete has a comment.

PETE CIPOLA:

Well, obviously, you have to have the product readily available. And I think up to this point and time, electric vehicles have been more on the demonstration or test program phase. And just really over the past year or so, have they become more and more readily available. Obviously, marketing and the selling of the vehicles and having people that are basically experts in it is a critical element of trying to get them out. We have… actually, in our fleet, our non-revenue, our non-bus fleet, we have 40 electric vehicles now in our fleet of vehicles. And, they work very well. The only issue with the vehicles at this point and time is the range, and that's the only problem that we see at this point and time. But, like the vehicle that Rod is dealing with, I think he has like 120-mile range. A 120-mile range does give it a limitation.

ROD DIRIDON:

We promise now to go back to Oakland. Steve, would you like to have your question?

QUESTION:

Thank you, Rod.

My teacher said that the oil is going to run out in 70 years, so do you have any plans for it?

STEVE HEMMINGER:

Did you hear the question, Rod?

ROD DIRIDON:

Yes, Steve, I think we did, and it's a very good one. Oil is going to be running out in the world in the next several years. We don't know exactly how many, but in several years. And what do we plan to do when it runs out?

Maybe we can go to one of our experts and find the answer to that. Do any of the experts across the nation have a comment they'd like to make?

PETE CIPOLA:

Well I would only say that you see more and more vehicles looking towards electricity as a source. And whether it's a fuel cell or solar power or other kinds of electrical energy, I think electricity in any way, shape, or form is really going to be the weight of the future. And how we obtain that source of power is really the issue.

STEVE HEMMINGER:

If I could say something as well. We're speaking here from the CalTrans headquarters in Oakland, and there are large parts of this building that right now are not being heated or cooled because the state of California, as we all know, is suffering an electricity crisis. And so the state is conserving power in its buildings. And let's get back to the point Bill Millar made - that we all have an individual responsibility and an ability to choose to conserve more energy. If we can take public transit one day a week or two, and if we can walk around a little bit more instead of forcing Mom and Dad to drive us everywhere we go. All of those kinds of things can help save energy and help that oil that is a limited supply last a bit longer.

TRIXIE JOHNSON:

And when you are thinking about what you can do for your career - that research into alternative fuels, whether it's electricity or different ways of making electricity or perhaps something that no one has even thought of yet - is something that could be in your future career.

ROD DIRIDON:

Okay, let's get back to just the last couple of questions now.

Hampton Roads, since Hampton Roads is up on the screen, and then we'll go right to Washington.

QUESTION:

My name is Danielle Spearman, and I'm from Norfolk, Virginia, and my question is – why don't more cities have light rails?

ROD DIRIDON:

Well I can comment on that with, I think, a little expertise. Light rail is in a lot of cities now across the world. Most European cities have a light rail or a derivation of light rail. And many of the cities in the United States have light rail – Boston; Portland, Oregon; Calvary, Canada; Edmonton, Canada;

Sacramento; San Diego; San Jose; San Francisco; Denver… Many others do have light rail systems.

One of the reasons why light rail isn't built more quickly is because it is expensive. It does take a major construction effort to build it in most areas. And it is expensive. It costs between $20 million and maybe as much as $50 million dollars per mile, when you consider buying the cars and buying the maintenance facilities as well. So it isn't inexpensive. Although, it is less expensive than a fully equipped freeway, so if we're talking about one or the other, it's less expensive to build a light rail system. Each time you have a new investment in a new concept, there's a political and public inertia in a community. So it takes a lot of confidence building in the local community, and it takes a lot of time. And then it takes all that money. So I think that's the primary reason. The motive is good. It's probably not as good as commuter rail when you have a whole lot of people to carry. And it's not as good as a bicycle when you have only one person to carry, but it's a good mode. And it has to fit just like a carpenter's tool kit: you use the right tool for the right purpose. And light rail is one of the tools in the transportation carpenter's tool kit. If one of the other experts has a comment, it would be appropriate.

BILL MILLAR:

Rod, I think you handled it well. We have a question here in Washington.

QUESTION:

My name is Ebony Cooper, and my question is – locally, with train traffic and pollution problems caused by daily gridlock, do you know if Metro is working on any other modes of transportation, like *(Inaudible)* or overhead rails?

ROD DIRIDON:

Bill, that's probably a good one for you to answer. We don't have as much experience with Metro.

BILL MILLAR:

Well, there are a lot of different ideas that are out there. Certainly Rod, in your last answer, you talked about light rail and commuter rail and conventional ways of things. Some cities have tried different kinds of people movers. Some of them are elevated and have rubber tires. Some cities have tried monorails. For example, if you've ever traveled to Seattle, you'll see a short link of monorail. But whatever the solution that is there, it has to meet several tests. It has to be something that solves the problem. It has to be something people are willing to use. It has to be something that is affordable. And something that doesn't do significant harm that makes people not want to do it. So, there are a

lot of different ideas that are out there and a lot of places that are experimenting with different approaches.

ROD DIRIDON:

Thank you, Bill. Were there any other responses to that? New York has a big transportation system. Do you have any thoughts about alternatives to your underground system, or improvements to the underground system that might relate to the way Washington Metro might be improved?

KEVIN HYLAND:

Well, certainly, the size of New York as *(Inaudible)*. It is something that we do suffer from. But, just think about if we didn't have our subway system. The city would not be able to operate. So here the subway system is something that is vital to us and really proves the point – that if you're going to have that much condensed place to live, you need to have alternatives to just car transportation. It just does not work. So you need something like the subway system, and then it works very well. But we're looking to expand and make use of all of the alternatives that the students have been talking about today. Light rail looks like it may be very practical for us to get to our outlying airports. And as a matter of fact, we are installing right now, into our JFK Airport, a system which will bring the passengers directly to the subway. Light rail, monorail, all of these are considerations.

Also, the alternatives that have been spoken about—the power cells, the fuel cells, the electric cars, and the hybrid vehicles – and we have some buses that are hybrid vehicles. And certainly we do have a few cars that we're just beginning to experiment with and see how practical they will be for our system. So one of the answers to "where are we going to get our fuel in the future, when the gasoline runs out?" is - all of these alternatives that the children and the experts have been talking about today.

ROD DIRIDON:

Thank you very much.

We did have one more question. I think it was in Oakland.

QUESTION:

Are there any good ideas to persuade people to use non-polluting forms of transportation?

STEVE HEMMINGER:

Did you hear the question all right?

ROD DIRIDON:

Steve, we didn't. Would you repeat it please?

STEVE HEMMINGER:

Let me repeat it. The question is – are there any good ideas to persuade people to use non-polluting forms of transportation?

PETE CIPOLA:

Well, we began a program in Santa Clara Valley called the Ecopass Program. And the Ecopass is kind of a surname of an ecologically and economically-sound type of a system. And under this type of a program, we deep discount our annual pass to where it may cost as low as $20 per year, per person to be able to utilize the system. The caveat, or the hook on it, is that when we sell it to companies or when we sell it to schools or when we put into a development, everybody in the organization has to have one of these Ecopasses. And where we have seen that go in – and we have over 100,000 employees on that program – we've seen our ridership more than double wherever that goes in. The key to moving people out of their cars and into public transportation system – there are two keys: we have to put a very good product on the road; it has to be clean, it has to be on-time, it has to be very dependable; and we also have to make it easy for them to be able to utilize this system. If we don't do that, then we fail at providing an effective transportation system. And we fail moving people out of their cars. So, the first thing is put a good product out on the street.

ROD DIRIDON:

Thank you, Pete.

Is there any other comment from any of the other experts in regards to that question?

STEVE HEMMINGER:

Well let me just, if I could Rod, take advantage of the question to make a plug for something that Pete knows all about, which is something we call Translink. He said it's important to make it easier for folks to use transit in the Bay Area. As a lot of the kids here know, we have a lot of different public transit systems. And this card, which some folks will be testing in the Bay Area this fall, will let you use any of those public transit systems with just one piece of plastic.

ROD DIRIDON:

That's very important, and I think the Bay Area is way ahead of the rest of the nation in terms of that *(Inaudible)* transfer opportunity.

Are there any other questions now across the nation?

BILL MILLAR:

We have one from Washington.

ROD DIRIDON:

Let's proceed from Washington and then we have a question from a parent from San Jose.

QUESTION:

Why do we still continue to make cars that use gasoline and fuel when we know what it does to the ozone layer?

ROD DIRIDON:

Bill, as I heard it, it was – why do we continue to make gasoline powered cars when we know what it does to the ozone layer?

I think it's a very good question. And I think part of the reason that we are – and I am kind of dircetly involved because I went through the process of buying electric cars recently – part of the reason is because the automobile industry has become committed to making gasoline-powered cars because they know how to make gasoline-powered cars. And they know that they can make a profit on gasoline-powered cars. And there's a whole infrastructure out there to support gasoline-powered cars in terms of gas stations and maintenance facilities and so on. And so, that's what's called kind of "inertia" - getting the country to change from what we know how to do now to something we know is better is very hard for us to do. The automobile companies now are beginning to make electric cars, but they're not making very many. And the reason they're not making very many is because they're not sure that they can make a profit on those electric cars. So it will take a while to gradually get the automobile industry to shift over to an environmental-friendly mode of propulsion. But it will be just like smoking across the country was a few years ago. It took us years to get the people to realize that smoking kills you. And gradually, once we began to realize it and everybody began to understand it. Now it's very rare that you see people smoking anymore in closed places. And so gradually, I think it will be the same way with automobiles. Gradually we will learn that electric vehicles and dual mode vehicles and alternatively built vehicles do work. People will buy them. And gradually Detroit will then catch up with the demand. Other people might have a different perspective on that, and any of the other people are welcome to make a comment if they want.

HAMPTON ROADS MIDDLE SCHOOL, NORFOLK, VA:

We have a question in Hampton Roads.

My name is Jamie, and I'm from Norfolk. What are the political barriers to get better sustainable transportation?

ROD DIRIDON:

Bill Millar in Washington DC is the best political mind around. He's hired by the American Public Transit Association to guide that process, and Bill, maybe you have a comment.

BILL MILLAR:

Well, I have several comments on it. First is one I said earlier. What kind of choices do people want to make? People have to have information. They have to know there's a different way of doing things than we've traditionally done. So part of the answer is in giving people information, making sure that they understand that there are in fact real choices out there.

Second, we need to bring people together who think in a different way. And so, an example is the session that we're all participating in today. I know the children here in Washington are interested in the fact that there are children in Hampton Roads and children in Oakland and in San Jose that are asking the same kinds of questions that they're asking. Well, the kind of technology we're using today, particularly as more and more of us use home computers and email and quick message one another, will allow us to exchange information so we can find out who else has good ideas. Out of that process, then will come better ideas that then we can work with people in the Congress and people in government who have to, in the end, actually allocate and make money available.

So, there are a lot of things we can do. But one more time, it starts with the individual. It starts with the individual wanting to find out information, wanting to find out different ways of doing things, and then working with others to sell them on that idea, and ultimately enough people to support an idea that it can make it through our legislative processes.

ROD DIRIDON:

That's a good lesson in Civics 1A, Political Science 1A, Bill. Thank you very much.

We do have a question here in San Jose.

QUESTION:

My name is Yasmin Aranda. And I want to know – why do we continually use fossil fuels when we already have the technology to use sustainable energy forms?

ROD DIRIDON:

That question was kind of answered earlier. But it is from a different point of view, maybe generally using fossil fuels. And I think maybe Bill answered it to some extent just before you were able to ask your question. And that is – it takes a long time to be able to develop a constituency to encourage the government leaders to move to a different kind of fuel. And it takes a long time to get the public to be demanding of a different kind of fuel-powered vehicle. So it is just going to take time.

And part of what we are doing with you people, as mentioned by Bill, is to let you all know that you are all concerned about the environment. And maybe if you'll all work in your local areas, we'll have a political force that will change the world. And that would be wonderful.

We do have one more question, and it's by one of the parents. This will be the last question. We're out of time after this one.

QUESTION:

My name is Debbie Aranda, and I'm a parent of a student at Meadows here in San Jose. And my question is – with the current energy crisis here in California, with the electricity and gas, which is more feasible for transportation at this point and time? Gasoline or electricity?

ROD DIRIDON:

Maybe Steve or Pete might be interested in taking on that one. They're both more involved directly with that.

STEVE HEMMINGER:

From my point of view, it's a very good question because very often we talk about the electricity for propelling our vehicles as a cleaner form of transportation. And it is, but if the electricity becomes so expensive to buy, it becomes very difficult. I think one thing that Pete mentioned earlier – and I think Bill Millar did as well – is the fuel cell technology that is being talked about for our public transit buses. It is something that really doesn't rely on either one and that can really sort of turn the page on all of the limited energy sources that we have into one that is pretty much unlimited, as long as we can make the technology work better and get the cost down. Because those buses right now cost a lot more than a regular bus does, and we only have so much money to buy buses. I think Pete probably knows quite a bit more about that technology than I do. And that might be a really promising solution to the problem we have now of both electricity and gas being short.

PETE CIPOLA:

I agree with that. I think what… I was at a meeting at dinner last night talking about this very same topic. I'm totally convinced, and I really do agree with the Governor, that in three years, California is going to be overproducing electrical energy. And I really do believe that. I think that putting in the type of power plants will be *(Inaudible)*. And I don't believe that it's just a California problem. I think it's because of our success and our economic growth that it kind of popped here first. But, I think it's a universal problem throughout the United States. And I think that one of the unique things happening when it happens in California is that there are many entrepreneurs here that say, "Okay, here's a problem. And here's an opportunity to resolve that problem." And that's why California is so successful in dealing with these issues. I do really believe that electricity is going to be the energy source of the future, the long term energy source of the future.

I think it's going to be powered in such ways that I don't have any idea how it's going to be powered. I think it's going to be the minds of this room, the scientists of the future that are going to come up with enhancements on fuel cells, enhancements on new technology. I think we're going to learn *(Inaudible)* things from space travel and space technology that we're going to be able to utilize to help produce this very valuable resource. My regret is that I'm not going to live that long to see all these exciting things happen in the future.

ROD DIRIDON:

Pete, thank you very much for that comment. It's a good segue into our close. Thank you to all the classes for being here. And thank you for all of the experts for sponsoring the classes. You teachers are the most important people in the world. We ought to be paying you ten-times what you're getting and we ought to be appreciating you more. You're just the most important people.

We're going to have a closing now by Dr. Kong. Dr. Dongsung Kong, Professor of Political Science, San José State University, who is the one who organized this effort. Thank you very much, D.K.

CLOSING REMARKS

DR. DONGSUNG KONG:

Thank you, Rod. I want to thank all the participating transportation leaders, experts, administrators, teachers, and students. And most of all my heart goes to the students here.

Today I am thrilled to hear your concerns about your environment and the great ideas you proposed. As you've already experienced by working with your teachers about sustainable transportation, great ideas don't come up easily. Great ideas only come to those who have a firm foundation in math, science, and critical thinking, and those who care about our future. The great scientist Einstein called it "intellectual love." And today we have witnessed that we have it. I strongly encourage you to continue improving your intellectual foundations so that your great ideas can be realized.

Before I close, let me thank all the staff members and technicians who worked very hard behind the scenes and helped us get connected online for this conference.

Once again, I'd like to thank all of you. Students are our future, and our future is bright because of all of you. Thank you very much.

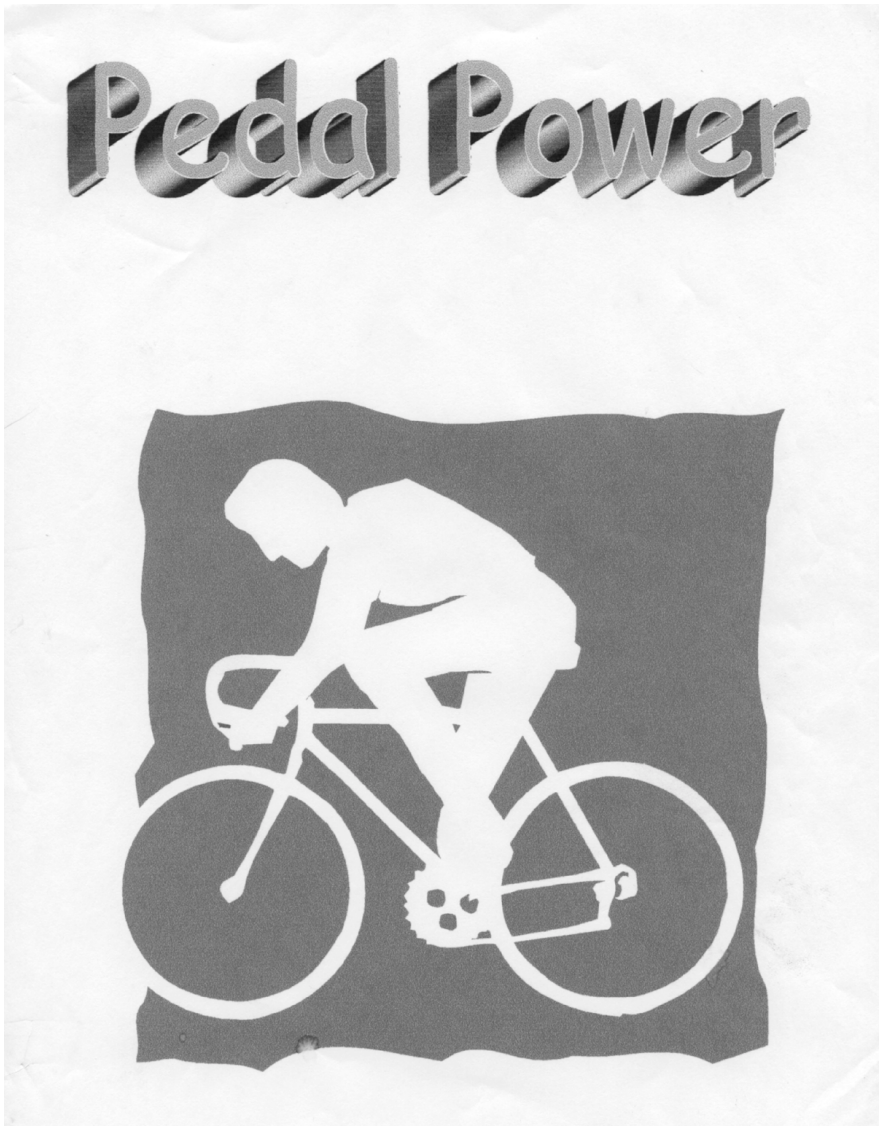
(Applause)

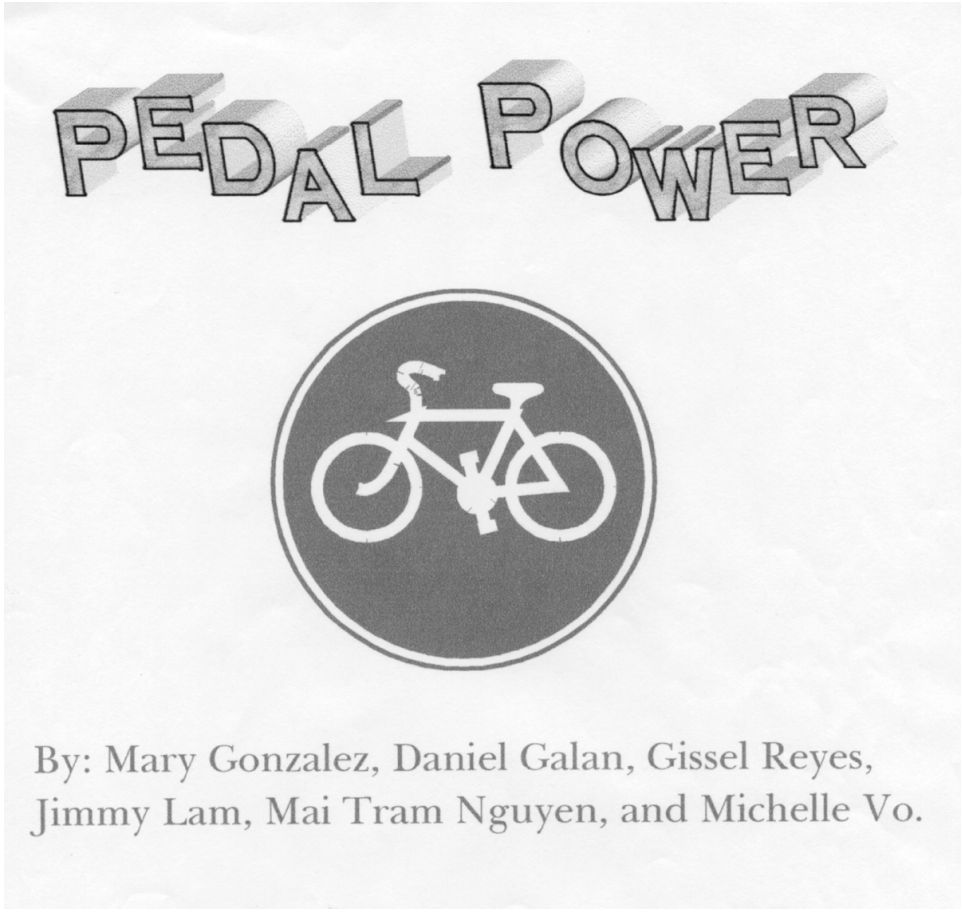
JEANNE MEADOWS ELEMENTARY SCHOOL

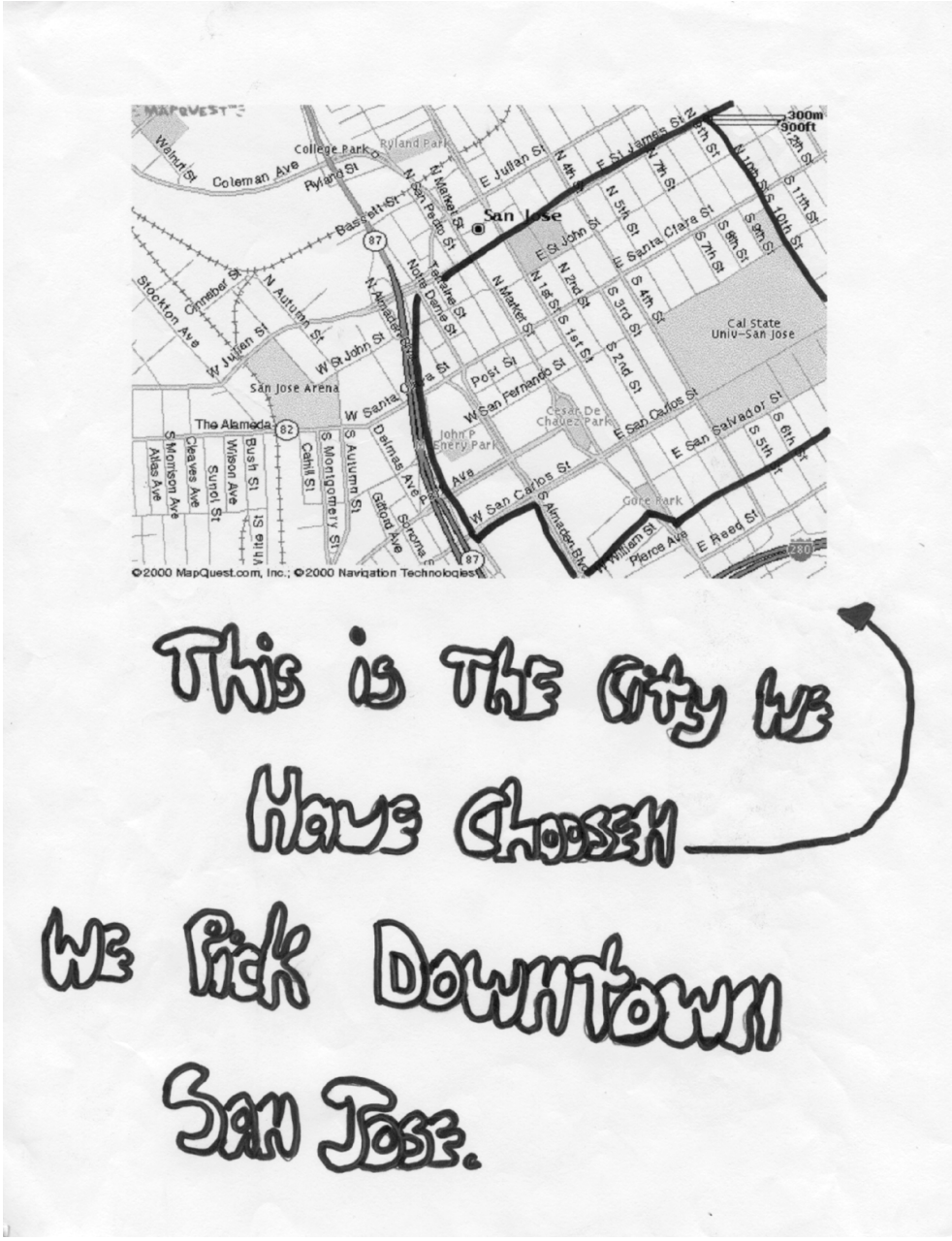
1250 Taper Lane, San Jose, CA 95121

PROJECT NAME: PEDAL POWER

Team Members:
Mary Gonzales, Gissel Reyes, Mai-Tram Nguyen, Daniel Galan, Jimmy Lam, Michelle Vo.




PEDAL POWER
By: Mary Gonzalez, Daniel Galan, Gissel Reyes,
Jimmy Lam, Mai Tram Nguyen, and Michelle Vo.



This is the city we have chosen

We pick Downtown San Jose.

Pedaling Power

Our report is about a city having pedal power only; the city we have chosen is San Jose. This type of transportation will help by not polluting, save money on gas, fit in the city, and at the same time it will help us exercise. This kind of bike transportation needs self- energy; everyone on a pedal bus or car will have to pedal except old people, babies, or pregnant women.

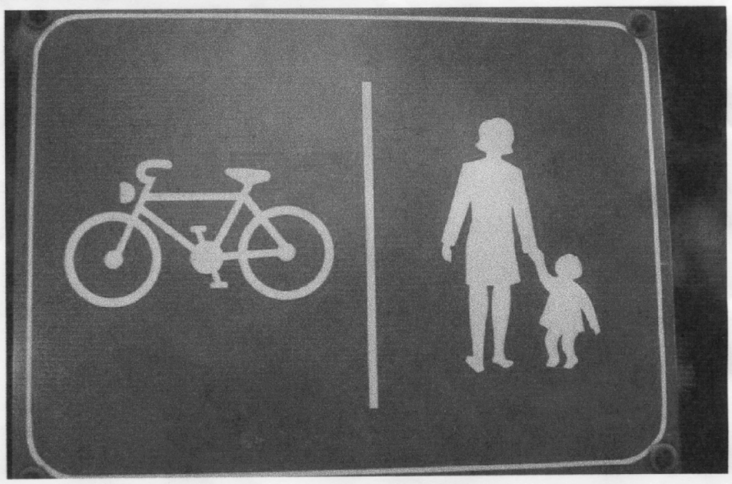
The bikes will be painted green and will be written on each bike The Property of San Jose. That way we'll be able to tell which bike belongs to the city, and everyone will able to use the 300 bikes all over downtown San Jose on Sundays.

For the police we would have pedal cars with a siren on top, that way we will know when they're chasing someone.

For safety all you need is a helmet to

protect your head and if you get thirsty you can always carry a water bottle in the back container. This project would really help the environment in our city.

These are some signs we will put up. That means we are only allow to ride bikes or anything that has to do with pedaling.



This is a picture of someone riding a bike to an open street store that will be provided only on Sundays because that day will be the Pedal Power Day only. All city bikes would have storage containers on the bikes because people would need space for shopping goods.

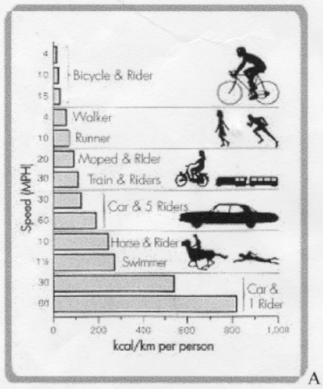
We will have this kind of bike that is shown above. We have invented a wagon that is going to be pulled by that bike. There will be two of those bikes so, four people are going to pedal it and make the wagon move. The wagon is going to be attached to the bikes. This kind of wagon

is propelled by these bikes. The people who are pedaling will get paid to carry elders and pregnant women. When they get tired, new people will go and replace them.

We can park the bike we are using in any place shown above. We will need helmets for safety and you will not need bike locks because the bikes are free to use. We think that this transportation will cause less traffic than cars , take less space and create lees noise.

How Far Do You Want To Go?

It takes less energy to bicycle one mile than it takes to walk a mile. In fact, a bicycle can be up to 5 times more efficient than walking. If we compare the amount of calories burned in bicycling to the number of calories an automobile burns, the difference is astounding. One hundred calories can power a cyclist for three miles, but it would only power a car 280 feet (85 meters)!



A comparison of the energy cost of various forms of transportation shows that the bicycle is most energy-efficient.

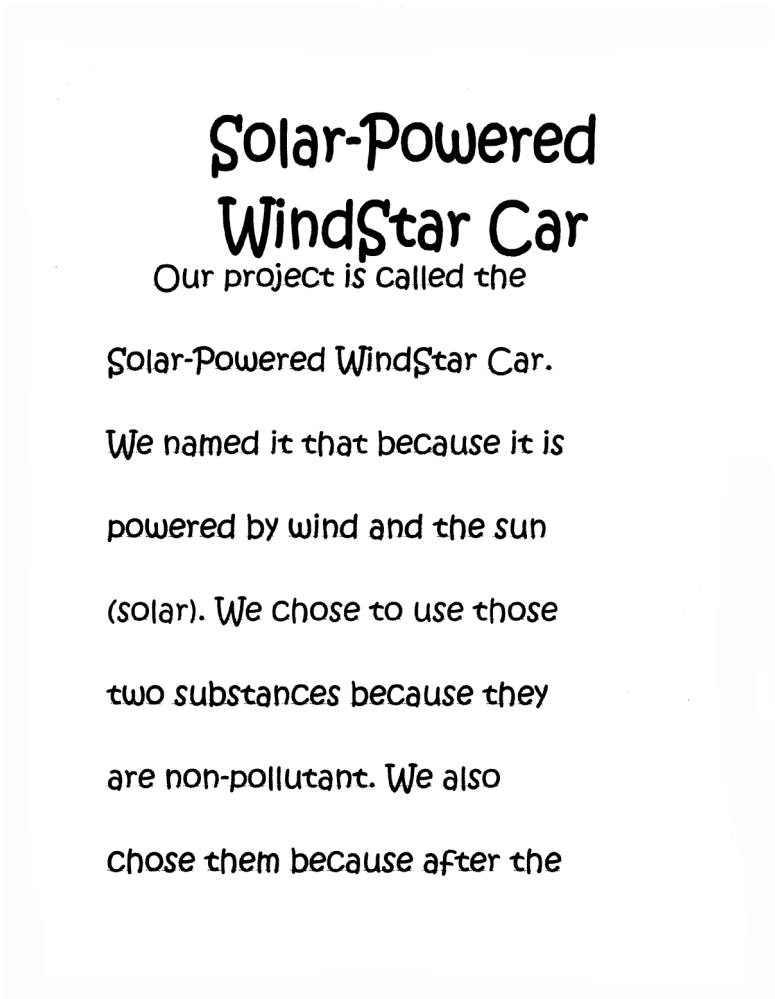
(This is just some information on bikes.)

JEANNE MEADOWS ELEMENTARY SCHOOL

1250 Taper Lane, San Jose, CA 95121

PROJECT NAME: WIND STAR CAR

Team Members:
David Nguyen, Yasmin Aranda, JeMarie Ayap, Christian Zarate, Marwin Balanza

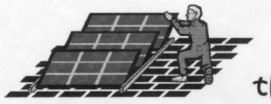


solar and wind attracter is built, the resources are free. They also are no threat to animals, the world, or us. Also we chose it because the solar panels are already accessible to be built and are not costly. They are the most commonsensical articles.

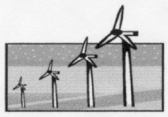
Wind is also somewhat valid to be used. They are always working especially if you set them up in windy areas. Those are the reasons we chose wind and solar power.

The way our project works is it is a car with a large fan strapped on the back, that is powered by a battery.

The battery is charged up by energy created with solar-power and wind-power. The solar-power is created with solar panels



that are set up on top of your garage, the parking lot to your residence or, if you're out of town, in the hotel parking lot.

Your car can also be powered by wind. 

The wind generators can also be set up in windy places and they can create energy that can charge the battery and that will run the car until it needs to be recharged. That is all about the Wind Star Car and how it works.

ABBREVIATIONS, ACRONYMS and TERMS

BART	Bay Area Rapid Transit – A medium-rail system that operates throughout various locations in the Bay Area
VTA	Valley Transportation Authority
MTC	Metropolitan Transportation Commission
APTA	American Public Transportation Association - APTA serves and leads its diverse membership through advocacy, innovation, and information sharing to strengthen and expand public transportation.
Sustainable	Of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged
Eco Pass	Eco Pass is an annual transit pass that employers purchase for all full-time Silicon Valley employees at a given worksite, giving them access to free, unlimited travel on VTA Bus, Light Rail and Paratransit service, seven days a week
Bay Area	The San Francisco, California Bay Area
Silicon Valley	The Santa Clara Valley and its surrounding area; the area south of the San Francisco Peninsula; primarily located in the South Bay, though the definition is somewhat flexible and can include any nearby area where semi-conductor or computer-related enterprises exist, from as far north as Marin County, south and west as Watsonville, and east as Livermore